DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 23, 2008 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 3, 4, 6, 7, 11 -14, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ziessel (Journal American Chem. Society 1993, *115*, 118-127) in view of Maeda et al (JP 2002-020426).

With respect to claim 3, 4, 6, 7, 11 -14, 18, and 20, Ziessel discloses a compound comprising a metal hydride complex represented by the formula (2a) (see Scheme I, 2a-d – page 119) wherein the metal atom in formula (2a) is iridium (see Scheme I, 2a-d – page 119 and column 1, paragraph 3 - page 120). Further when the metal hydride complex is

dissolved in an organic solvent, acetonitrile (CH_3CN - column 2, paragraph 1), the metal hydride complex is dissolved and is in solution. Ziessel additionally discloses a compound providing a metal hydride complex of formula (2a) wherein: (a) iridium represents the metal atom (Scheme I, 2a-d page 119); and (b) exciting the metal hydride complex by irradiating the metal hydride with white light until deprotonation takes place (page 122 - Table I, complex 2c, paragraph *a*).

Although Ziessel discloses the irradiation and excitation of the metal hydride complex by the use of white light, Ziessel fails to teach the deprotonation and irradiation using a laser beam, thus producing an acidic solution.

Maeda et al discloses a chemically amplified resist comprising an acid generator that, upon irradiation with a laser beam (paragraph 0006), generates a proton acid (H+). The proton acid gives rise to an acid catalyzed reaction with the resist, thus causing a higher sensitivity in the resist (paragraph [0006]). Therefore, it would have been obvious to one of ordinary skill within the art to use a laser beam such to irradiate the metal hydride complex (acid generator) as disclosed by Ziessel to produce a proton acid thereby improving the sensitivity of a resist when said metal hydride complex is used therein.

4. Claims 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ziessel (Journal American Chem. Society 1993, *115*, 118-127)

in view of Maeda et al (JP 2002-020426), and in further view of Lenges et al. (Organometallics 2000, Volume 19, pages 1247-1254).

With respect to claims 10 and 17, Lenges et al. discloses a metal hydride complex of formula (1) wherein X, the metal atom, is cobalt (figure 2, page 1252 and paragraph 1). The cobalt complex (compound 13) meets the limitation for the compound of formula I in applicant's claim. For that reason it would have been obvious to one of ordinary skill within the art to deprotonate said cobalt complex as taught by Ziessel in view of Maeda.

5. Claims 8, 9, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ziessel (Journal American Chem. Society 1993, *115*, 118-127) in view of Maeda et al (JP 2002-020426), and in further in view of Amendola et al (US 2002/0083643).

With respect to claims 8, 9 15 and 16, Ziessel in view of Maeda discloses a metal hydride complex as an acid generator as comprising an iridium metal atom as disclosed by applicant's formula (1), however fails to mention the use of rhodium or ruthenium as the metal atom.

Amendola et al discloses a hydrogen generation catalyst in which transitional metal catalysts are used. Catalyst containing Group IB to Group VIIIB metals of the periodic table such as ruthenium and rhodium are preferred. These transitional metals catalyze chemical reactions and aid the hydrolysis of water by absorbing hydrogen in the form of atomic H such as hydride or protonic H+ (paragraph [0040]). Therefore, it would

have been obvious to include rhodium or ruthenium metal atoms in the place of the iridium atom within the complex disclosed by Ziessel in view of Maeda.

6. Claims 19, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ziessel (Journal American Chem. Society 1993, *115*, 118-127) in view of Maeda et al (JP 2002-020426) and in further view of Abura et al (Journal of American Chemical Society 2003, *125*, 4149-4154).

With respect to claims 8, 9 15 and 16, Ziessel in view of Maeda discloses a metal hydride complex as an acid generator as comprising an iridium metal atom as disclosed by applicant's formula (1), however fails to disclose the use of methanol as a solvent.

Abura et al disclose an iridium hydride composition that can be used as a catalyst for acid generation wherein methanol is used as a solvent upon recrystallization (column 2, paragraph 1 page 4150) yielding a water-soluble complex (paragraph 2, column 2 page 4150). Methanol and acetonitrile are equivalent conventional organic solvents that are used in the formation of iridium hydride complexes. Therefore, it would have been obvious to one of ordinary skill within the art to use methanol because Maeda shows methanol as a conventional solvent in producing an acidic solution.

Response to Arguments

7. Applicant's arguments, see 6-10 of Remarks, filed May 12, 2008, with respect to the rejection(s) of claim(s) 3-5, 7,11, 12, 18 and 19 under USC 102 (b) and 35 USCC 103 (a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Ziessel and Maeda (JP 2002020426). Ziessel discloses the metal hydride composition as claimed by applicant, however fails to disclose the use of a laser beam for producing of an acidic solution by deprotonation. Maeda teaches how a chemically amplified resist with an acid generator, upon irradiation with a laser beam (paragraph 0006), generates a proton acid (H+) thereby increasing the sensitivity of the resist.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PONDER N. THOMPSON RUMMEL whose telephone number is (571)272-9816. The examiner can normally be reached on Monday-Friday 7:00 am - 4:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. N. T./
Examiner, Art Unit 1795

/Cynthia H Kelly/

Supervisory Patent Examiner, Art Unit 1795